REMARKS

This Amendment is in response to the Office Action dated April 21, 2005. In the Office Action, claims 9-12 were rejected under 35 USC §101, and claims 1-16 were rejected under 35 USC §103. By this Amendment, claims 1, 5, 9 and 13 are amended, and claims 17-20 are added. Currently pending claims 1-20 are believed allowable, with claims 1, 5, 9 and 13 being independent claims.

CLAIM REJECTIONS UNDER 35 USC §101:

Claim 9 was rejected as reciting non-statutory subject matter. Final Office Action, paragraph 3. Claim 9 presently reads, in part, "determining whether said number of errors equals the maximum number of correctable errors in the digital signal." It is respectfully submitted that this claim limitation imparts a useful concrete and tangible result by determining the whether the number of error equals the maximum number of correctable errors in the digital signal. Claims 10-12 are dependent on and further limit claim 9. Since claim 9 is believed to contain statutory subject matter, claims 10-12 are likewise believed to contain statutory subject matter.

CLAIM REJECTIONS UNDER 35 USC §103:

Claims 1-16 were rejected under 35 USC §103 as obvious over U.S. Patent Application Publication No. US 2001/0053225 A1 to Ohira et al. (hereinafter "Ohira") in view of Zang et al., On the Methods for Solving Yule-Walker Equations, IEEE Transactions of Signal Processing, Vol. 40, No. 12 (Dec. 1992) (hereinafter "Zang") and further in view of U.S. Patent No. 4,694,455 to Koga et al. (hereinafter "Koga"). Final Office Action, page 5.

Claim 1

Claim 1 recites, in part, "establishing a Yule-Walker equation . . . by using a matrix that includes, as components, the elements of a Galois field GF(2^m) applied to Reed-Solomon codes having an arbitrary minimum distance, and a vector that includes, as components, said elements of said Galois field GF(2^m)."

The Final Office Action states that Ohira does not teach establishing a Yule-Walker equation or obtaining the solution thereof,

but alleges that one skilled in the art would have been motivated to modify Ohira in light of Zhang. Final Office Action, page 7. For example, Zhang states that the Levinson algorithm, Berlekamp-Massey algorithm and the Euclidean algorithm are three well-known fast algorithms for solving Yule-Walker equations. Zhang, page 2987.

The Applicant respectfully submits, however, that the Levinson method, Berlekamp-Massey method and the Euclidean method include conditional branches to obtain Yule-Walker solutions. Application, page 46, lines 19-22. Claim 1, as amended, recites "obtaining the solution of said Yule-Walker equation without conditional branching."

In addition, neither Ohira nor Zhang teach employing Jacobi's formula to result in the calculation of the determinants of the symmetric matrices. Koga, however, is offered as teaching a Q symmetrical determinant in which a diagonal element of the determinant is denoted by S_{2i} expressed as $S_{2i}=S_i^2$, given as the square of a polynomial of syndromes.

The Examiner states "It would have been obvious to one of ordinary skill in the art at the time the invention was made that Koga's symmetrical determinant calculation would be implemented using Jacobi's formula." Final Office Action, page 8. The Applicant respectfully submits, however, use of the Koga algorithm is limited since the algorithm can be applied for BCH code or Reed-Solomon codes only when the minimum distance is an even number. Application, page 49, lines 15-21. Claim 1, as amended, recites "establishing a Yule-Walker equation . . . by using a matrix that includes, as components, the elements of a Galois field $GF(2^m)$ applied to Reed-Solomon codes having an arbitrary minimum distance."

Thus, it is respectfully submitted that Ohira, in combination with Zang and Koga do not teach or suggest all the limitations of claim 1. For at least this reason, claim 1 is allowable.

Claims 2-4 and 17

Claims 2-4 and 17 are dependent on further limit claim 1. Since claim 1 is believed allowable, claims 2-4 and 17 are also believed allowable for at least the same reasons as claim 1.

Claim 5

Claim 5 of the present Application is amended to recite, in part, "means for establishing a Yule-Walker . . . means for obtaining the solution of said Yule-Walker equation without conditional branching."

The Final Office Action states that Ohira does not teach establishing a Yule-Walker equation or obtaining the solution thereof, but alleges that one skilled in the art would have been motivated to modify Ohira in light of Zhang. Final Office Action, page 7. For example, Zhang states that the Levinson algorithm, Berlekamp-Massey algorithm and the Euclidean algorithm are three well-known fast algorithms for solving Yule-Walker equations. Zhang, page 2987.

The Applicant respectfully submits, however, that the Levinson, Berlekamp-Massey and the Euclidean methods include conditional branches to obtain Yule-Walker solutions. Thus, the Applicant respectfully submit that cited references do not teach or suggest all the limitations of claim 5. For at least this reason, claim 5 is allowable.

Claims 6-8 and 18

Claims 6-8 and 18 are dependent on further limit claim 5. Since claim 5 is believed allowable, claims 6-8 and 18 are also believed allowable for at least the same reasons as claim 5.

Claim 9

Claim 9 of the present Application recites, in part, "establishing a Yule-Walker equation . . . obtaining the solution of said Yule-Walker equation without conditional branching."

The Final Office Action states that Ohira does not teach establishing a Yule-Walker equation or obtaining the solution thereof, but alleges that one skilled in the art would have been motivated to modify Ohira in light of Zhang. Final Office Action, page 7. For example, Zhang states that the Levinson algorithm, Berlekamp-Massey algorithm and the Euclidean algorithm are three well-known fast algorithms for solving Yule-Walker equations. Zhang, page 2987.

The Applicant respectfully submits, however, that the Levinson, Berlekamp-Massey and the Euclidean methods include conditional branches to obtain Yule-Walker solutions. Thus, the Applicant respectfully

submit that cited references do not teach or suggest all the limitations of claim 9. For at least this reason, claim 9 is allowable.

Claims 10-12 and 19

Claims 10-12 and 19 are dependent on further limit claim 9. Since claim 9 is believed allowable, claims 10-12 and 19 are also believed allowable for at least the same reasons as claim 9.

Claim 13

Claim 13 of the present Application recites, in part, "establishing a Yule-Walker equation . . . obtaining the solution of said Yule-Walker equation without conditional branching."

The Final Office Action states that Ohira does not teach establishing a Yule-Walker equation or obtaining the solution thereof, but alleges that one skilled in the art would have been motivated to modify Ohira in light of Zhang. Final Office Action, page 7. For example, Zhang states that the Levinson algorithm, Berlekamp-Massey algorithm and the Euclidean algorithm are three well-known fast algorithms for solving Yule-Walker equations. Zhang, page 2987.

The Applicant respectfully submits, however, that the Levinson, Berlekamp-Massey and the Euclidean methods include conditional branches to obtain Yule-Walker solutions. Thus, the Applicant respectfully submit that cited references do not teach or suggest all the limitations of claim 13. For at least this reason, claim 13 is allowable.

Claims 14-16 and 20

Claims 14-16 and 20 are dependent on further limit claim 13. Since claim 13 is believed allowable, claims 14-16 and 20 are also believed allowable for at least the same reasons as claim 13.

CONCLUSION

In view of the forgoing remarks, it is respectfully submitted that this case is now in condition for allowance and such action is respectfully requested. If any points remain at issue which the Examiner feels could best be resolved by a telephone interview, the Examiner is urged to contact the attorney below.

No fee is believed due with this Amendment, however, should a fee be required please charge Deposit Account 50-0510. Should any extensions of time be required, please consider this a petition thereof and charge Deposit Account 50-0510 the required fee.

Respectfully submitted,

Dated: July 21, 2005

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